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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,582	01/24/2002	Kazuki Hosoya	018842.1195	3494

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EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.	Applicant(s)	
10/053,582	HOSOYA ET AL.	
Examiner	Art Unit	
Tho v Duong	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10 and 13-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 13-36 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Receipt of applicant's amendment filed 8/10/2004 is acknowledged. Claims 1-2,4-10 and 13-36 are pending. Claims 13-36 remain withdrawn from further consideration.

#### ***Response to Arguments***

Applicant's arguments filed 8/10/2004 have been fully considered but they are not persuasive. Applicant's argument that the office action fails to identify a suggestion or motivation to modify Okuda has been very carefully considered but is not deemed to be persuasive. The examiner agrees with the applicant that reference to Okuda does not disclose that the aluminum members are joined by resin. However, reference to Okuda was relied upon to disclose all of applicant's invention except for the limitation that the two aluminum members are joined together by a resin. Reference to Johann Huber was relied to teach the bonding of the two aluminum members in a stacked heat exchanger by resin. The suggestion and motivation of using resin in place of soldering is clearly disclosed in reference to Johann Hubber (column 1, line 20-42 and column 1, line 66- column 2, line 19). Johann Hubber discloses that the resulting plate-type heat exchanger is substantially less expensive than soldered heat exchanger, not only because of the lower cost of the adhesive, but also because the defect rate decreases with the use of the resin. Since the motivation and suggestion is clearly disclosed in the prior art. The rejections of claims 1-7 as being unpatentable over Okuda in view of Johann Huber remain proper.

In view of applicant's amendment, the 102 rejection has been withdrawn.

In view of applicant's amendment, claims 1,2 and 4-10 are rejected as follows:

### *Drawings*

The drawings are objected to because there are two different Figure 2, one was submitted in 8/10/2004 and the other one was submitted in 6/30/2003. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because there are two different texts describing figure 2. One was submitted in 8/10/2004 and the other one was submitted in 6/30/2003.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda (US 5,800,673) in view of Huber et al. (US 3,590,917). Okuda discloses (figures 5-7) a stacked type heat exchanger comprising a plurality of aluminum heat transfer tubes (1) formed by pairs of tube plates (6) and fins (2) being stacked alternatively with the tubes; each pair of tube plates (6) having flange portions (6a) connected together; a first tube plate of the pair is coated with a first portion of a resin (S); and a second tube plate of the pair is coated with a second portion of the resin (S). Okuda does not disclose that the first aluminum member and the second aluminum member are fixed as well as separated via the first and second portion of the resin. Furthermore, Okuda discloses that soldering method has been used to bond the two aluminum members together. Huber et al. discloses (figures 2,8, column 1, lines 20-42 and column 6, line 10 – column 8, line 54) discloses a stack of heat exchanger comprising a first aluminum member (108) coated with a first portion of a thermosetting or thermoplastic resin (portion adjacent to the first member); and a second aluminum member (109) coated with a second portion of thermosetting or thermoplastic resin (portion adjacent to the second member), wherein the first aluminum member is fixed to the second aluminum via the first portion and the

Art Unit: 3743

second portion of the resin, and wherein the first aluminum (108) is separated from the second member (109) by the first portion and the second of the resin for the purpose of lowering the cost of the heat exchanger and decreasing the defect rate of the heat exchanger plate joints by the use of the adhesive resin. Regarding claim 7, the resin material of Huber et al. is similar to the claimed resin. Therefore, it inherently provides lubricity as claimed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Huber et al.'s teaching in Okuda's heat exchanger for the purpose of lowering the cost of the heat exchanger and decreasing the defect rate of the heat exchanger plate joints.

Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda and Huber et al. as applied to claim 1 above, and further in view of Beasley (US 4,428,418). The combination of Okuda and Huber et al substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the adhesive resin is polyesters or nylons. Beasley et al. discloses (figure 1 and column 6, lines 45-63) a suitable adhesive resin such as polyesters or nylons, is used in bonding two aluminum heat exchanger members (16 or 54) for the purpose of forming integrity of the heat exchanger core without further using the expensive bonding method such as soldering or brazing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select nylon or Polyester as a resin adhesive for the purpose of joining two aluminum members without further using the expensive bonding method such as soldering or brazing.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda and Huber et al. as applied to claim 1 above, and further in view of Akiyama (US 4,804,713). The combination device of Okuda and Huber et al substantially disclose all of applicant's claimed

Art Unit: 3743

invention as discussed above except for the limitation that the adhesive is a vinylidene fluoride resin. Akiyama discloses (column 1, lines 54-63) that vinylidene fluoride resin has been used as a pressure adhesive for the purpose of obtaining an adhesive that has good balance of tack adhesive strength, and cohesive force as well as excellent weatherability, water resistance and oil resistance. Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use in the application of a particular heat exchanger. In re Leshin, 125 USPQ 416. In this case, if the Huber et al.'s heat exchanger is intended to use with oil or water or in an extreme weather, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Akiyama's teaching in Huber et al.'s heat exchanger for the purposing of obtaining an adhesive that has good balance of tack adhesive strength, and cohesive force as well as excellent weatherability, water resistance and oil resistance.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3743

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



TD

November 15, 2004



Tho Duong

Patent Examiner.